

CHAPTER II

SFWMD PERFORMANCE MEASURE VALUES

At least once every five years, the District must conduct an evaluation of its success in realizing the desired goals established in the DWMP. Such an evaluation cannot be accomplished using the activity-based information described in the previous chapter. It requires a performance-based assessment of the effectiveness of the various efforts undertaken by the District toward meeting long-term goals. To assist in the development of this annual report, the water management districts have committed to incorporate a series of performance measures that will provide an indication of their success in achieving the goals described in their respective DWMPs. In an effort to facilitate comparison of the five districts throughout the state, all of the districts have committed to using similar performance measures.

Different measures have been agreed upon to assess the impact of activities within each of the areas of responsibility identified in the DWMP: water supply, flood protection and floodplain management, water quality, and natural systems management. In some cases, however, a single performance measure may provide information in more than one area of responsibility. Some performance measures are common to all areas of responsibility. These are discussed separately. This chapter is organized into the following sections:

- A. Performance Measures Common to All Areas of Responsibility
- B. Performance Measures for Water Supply
- C. Performance Measures for Flood Protection and Floodplain Management
- D. Performance Measures for Water Quality
- E. Performance Measures of Natural Systems Management

Part A. Performance Measures Common to All Areas of Responsibility

Core CM(a): Acres in managed conservation areas acquired by the District

The District acquired 14,185 acres of conservation lands in FY 2002, bringing the total conservation lands controlled by the District to 346,425 acres (Florida Forever Work Plans - SFWMD, 2001b and 2002c). This includes only natural areas; not lands purchased for stormwater treatment areas (STAs), the East Coast Buffer and other water resource projects.

Core CM(b): For District-owned lands: 1) number of management plans required; 2) number of management plans completed; and 3) percentage of management plans completed on schedule

Nearly half the District-owned Save Our Rivers lands are managed by other agencies and preparation of management plans are those agencies' responsibilities. The District manages approximately 164,000 acres in 10 different projects. Each project requires a management plan. Five management plans have been completed.

Most Save Our Rivers projects contain multiple parcels that may be acquired over a period of years before enough contiguous tracts are put together to warrant a management plan. The District does not, therefore, develop specific timelines for management plan preparation. Further, some projects are being considered as wildlife and environmental areas and will be under Florida Fish and Wildlife Conservation Commission management. Prior to opening these areas to hunting, wildlife inventories must be prepared. The preparation of these inventories can further delay the development of management plans.

Core CM(c): Number and percent of land management plan activities being implemented according to plan schedules

In FY 2002, the District was the lead manager on ten land management projects. This includes Allapattah Flats, a large project acquired in late 2002, for which management plan development is underway. These projects are listed in **Table 5**. Five-year management plans must be developed for each project. At the end of the five-year period, these plans are updated. Projects needing management plans are:

- Allapattah Flats
- Kissimmee Chain of Lakes
- Biscayne Coastal Wetlands (2002 purchase)
- Loxahatchee Slough (management lease to Palm Beach County underway)
- Model Lands (highly discontinuous ownership).

Management activities that must be implemented for all of these projects are: prescribed burning, exotic plant treatment, resource protection (security), public use, and resource inventories (natural and cultural). The five-year management plans do not contain time schedules for these management activities. Instead, annual work plans specify what activities will be undertaken on each management area during each fiscal year. Burning, exotic plant control, resource protection, and public use are ongoing actions that are repeated annually. Inventories are prepared after sizable tracts have been acquired and are updated only to document a restoration activity or significant disturbance.

DWMP 2002 Annual Report

Table 5 indicates what management activities were implemented for each project during FY 2002 (SFWMD, 2000f).

Table 5. Management Activities Being Implemented for SFWMD Land Management Projects

Project Name	Prescribed Burning	Exotic Plant Treatment	Resource Protection (security)	Public Use	Resource Inventories (natural and cultural)
Allapattah Flats		✓	✓		✓
Corkscrew Regional Ecosystem Watershed (CREW)	✓	✓	✓	✓	✓
DuPuis	✓	✓	✓	✓	✓
Kissimmee Chain of Lakes	✓	✓	✓	✓	✓
Kissimmee River	✓	✓	✓	✓	✓
Lake Marion Creek	✓	✓	✓	✓	✓
Loxahatchee Slough		✓	✓		
Model Lands		✓			
Reedy Creek	✓	✓	✓	✓	✓
Shingle Creek	✓	✓	✓	✓	✓

Core CM(d): Acres of land acquired through less-than-fee ownership, on an annual and cumulative basis

The District has acquired 14,953 acres in less-than-fee ownership since implementation of the Save Our Rivers Program in 1981. **Table 6** breaks down the acreage acquired by year.

Table 6. The Acres Acquired in Less-than-Fee Title by the SFWMD Each Year

Year	Acreage
Pre-1990	7,428
1990	1,253
1991	1,214
1992	0
1993	1,868
1994	415
1995	99
1996	1,655
1997	649
1998	144
1999	33
2000	98
2001	97
2002	0
Total	14,953

DWMP 2002 Annual Report

Core CM(e): Percentage of Environmental Resource Permitting (ERP) for which compliance inspections were conducted, and of those inspected, percentage found to be in compliance

To determine the number of environmental resource permit compliance inspections conducted during FY 2002 and the percentage of these in compliance, data was gathered from the District's Environmental Resource Compliance Oracle and Access Databases and paper form checklists. The results are as follows:

- Engineering and Environmental Inspections
 - Total engineering and environmental inspections for FY 2002: 8,212
 - Total inspections in compliance for FY 2001: 6,969
 - Percentage found to be in compliance: 85 percent
- Environmental Inspections
 - Total environmental inspections: 1,821
 - Environmental inspections in compliance: 992
 - Percentage environmental inspections found to be in compliance: 71 percent
- Engineering Inspections
 - Total engineering inspections: 6,391
 - Engineering inspections in compliance: 5,673
 - Percentage engineering inspections found to be in compliance: 89 percent

Part B. Performance Measures for Water Supply

The SFWMD is broken up into four water supply planning areas: Lower East Coast, Lower West Coast, Kissimmee Basin, and Upper East Coast. Figure 1 shows the boundaries of these planning areas. The performance measures utilized to evaluate the effectiveness of water supply provide indications of changes in water demand rates, changes in reused water quantities, as well as activities designed to protect water sources, such as potable water wellfields.

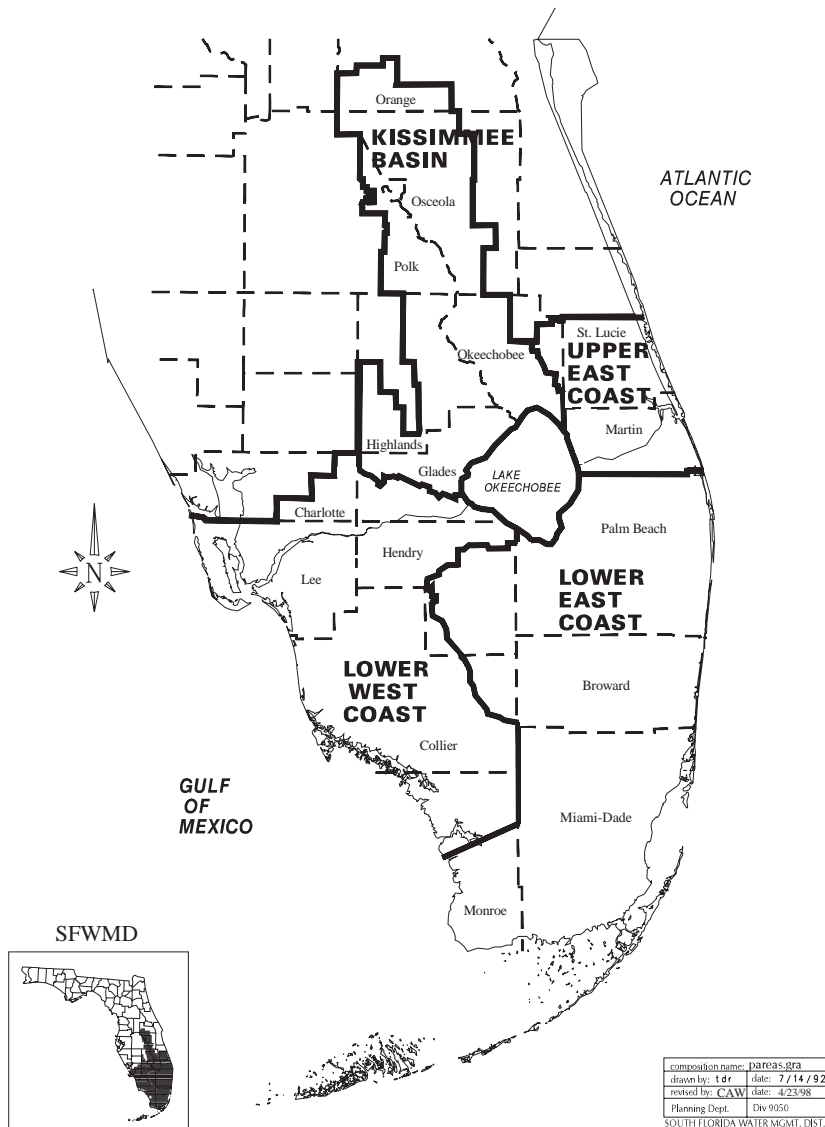


Figure 1. Water Supply Planning Areas within the SFWMD

Core Objective WS 1: Increase available water supplies and maximize overall water use efficiency to meet identified and existing future needs

Core WS 1(a): Percentage of domestic reuse

The percentage of domestic reuse for FYs 1999 through 2001 for the entire District is presented in **Table 7**. This data is from the *2001 Reuse Inventory* and *2002 Reuse Inventory* published by FDEP (FDEP, 2001a and 2002a). The 1999 data were adjusted from the 2000 update of the DWMP to account

DWMP 2002 Annual Report

for duplication. Figure 2 presents the SFWMD's Reuse History.

Table 7. Percentage of Water Reuse in the SFWMD

	1999	2000	2001	Comments
Number of treatment plants	122	116	117	Total Numbers
Number of reuse systems	118	111	111	Total Numbers
Wastewater treatment facility capacity (mgd)	1,014	1,012	1,013	
Wastewater treatment facility flow (mgd)	762	761	769	
Reuse capacity (mgd)	326	317	335	
Reuse flow (mgd)	180	190	197	
Percent Reuse SFWMD	24%	25%	26%	Reuse Flow / WWTF Flow
Percent Reuse Lower East Coast	8%	9%	9%	Reuse Flow / WWTF Flow
Percent Reuse Lower West Coast	84%	93%	89%	Reuse Flow / WWTF Flow
Percent Reuse Kissimmee Basin	99%	99%	100%	Reuse Flow / WWTF Flow
Percent Reuse Upper East Coast	44%	40%	48%	Reuse Flow / WWTF Flow

Figure 2. The Reuse History for the Entire SFWMD for 1994 to 2001.

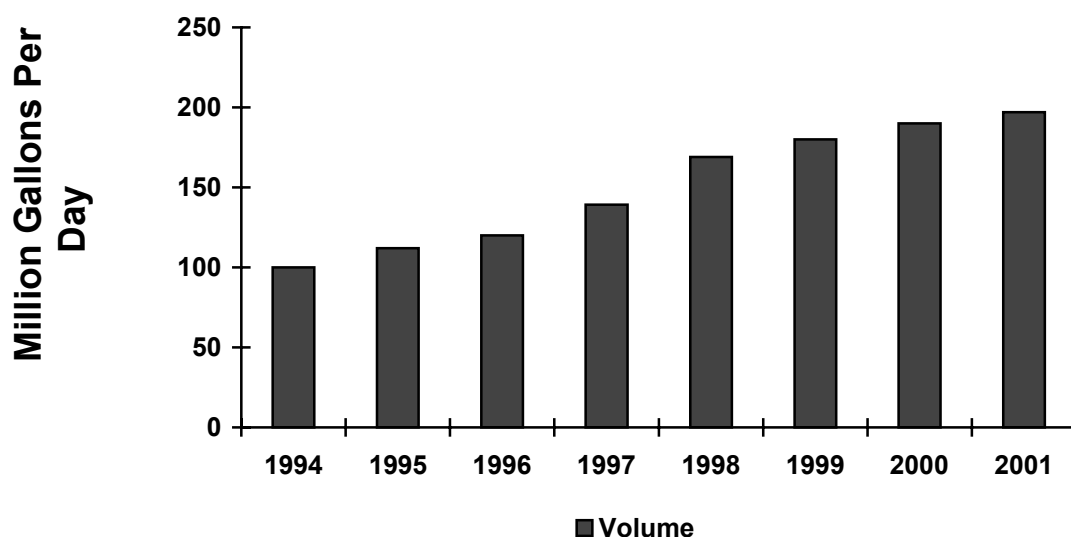


Table 8 presents the capacities and reuse ratios for the District by water supply planning area for 2001 (FDEP, 2001a). The Wastewater Treatment Facility (WWTF) Capacity is the combined FDEP permitted treatment capacity for all facilities with a capacity of 0.10 MGD or greater. The combined volume of wastewater these facilities treated during FY 2001 is stated in the WWTF Flow column. The Reuse Capacity is the combined permitted reuse capacity of these facilities while the Reuse Flow is the combined volume of reclaimed water that was reused during FY 2001. The Capacity Ratio is the fraction of the treatment capacity that is permitted for reuse while the Flow Ratio indicates the fraction of wastewater treated that was reused during 2001. In 2001, only 26 percent of the wastewater treated was reused, compared to a capacity to reuse in the District, which was 33 percent.

DWMP 2002 Annual Report

Table 8. Capacity and Reuse Ratios for the SFWMD by Planning Area for 2001

Planning Area	WWTF Capacity (mgd)	WWTF Flow (mgd)	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio ^a	Flow Ratio ^b
Lower East Coast	771	611	94	57	0.12	0.09
Lower West Coast	102	71	92	63	0.90	0.89
Kissimmee Basin	109	69	130	68	1.19	1.00
Upper East Coast	31	18	19	8	0.61	0.48
SFWMD	1,013	769	335	196	0.33	0.26

a. Capacity Ratio = Reuse Capacity / WWTF Capacity

b. Flow Ratio = Reuse Flow / WWTF Flow

Core WS 1(b): Gross per capita water use (public supply) by District and water supply planning area

An estimate of public water supply per capita used in the District during 2000 is presented in Table 9. Based on 439,736 mgd of water withdrawn for public supply and a population served of 6.135 million people, the total public water supply per capita for the SFWMD is 196 gallons per day. For some systems, monthly pumpage and population served were not available, but the resulting difference in the total per capita usage is very minor and the omission of this data from the calculation does not impact the total usage. The 20 mgd of water used by the Reedy Creek Improvement District is not included in the Kissimmee Basin or SFWMD totals, as the USGS classified this water as commercial.

Table 9. Gross per Capita Public Water Supply for 2000 for the SFWMD and its Planning Areas

Planning Area/County	Per Capita	Population Served	Raw Water Pumpage (mgd)
Lower East Coast			
Broward County	161.0	1,603,081	100,718
Dade County	170.9	2,207,800	140,775
Monroe County	215.8	78,855	6,227
Palm Beach County	221.9	1,035,732	86,440
Lower East Coast Total	185.0	4,925,468	334,160
Lower West Coast			
Lee County	128.5	357,289	30,128
Collier County	231.3	226,175	20,540
Hendry County	211.5	20,457	1,802
Glades County	115.0	4,782	150
Charlotte County	0	1,669	39
Lower West Coast Total	235.0	610,372	52,659
Kissimmee Basin			
Highlands County	104.3	4,700	134
Okeechobee County	103.2	21,600	808
Polk County	231.8	10,116	186
Osceola County	232.7	128,932	10,878
Orange County *	381.1	224,086	27,989
Kissimmee Total	279.0	389,434	39,995

DWMP 2002 Annual Report

Upper East Coast			
Martin County	211.8	87,100	6,553
St. Lucie County	146.0	122,960	6,369
Upper East Coast Total	166.0	210,060	12,922
District Total	196.0	6,135,334	439,736

* The population figure for Orange County comes from the DWMP 2001 Annual Report.

Core WS 1(c): Within each water supply planning region: 1) the estimated amount of water supply to be made available through the water resource development component of the regional water supply plan; 2) percent of estimated amount under development; and 3) percent of estimated amount of water actually made available

Table 10 presents the amount of water that was estimated to be made available through the water resource development components of the regional water supply plans (SFWMD, 1998, 2000b, 2000c, 2000e Source of 1,145 mgd number: LECRWSP May 2000, Table 54 “Average Annual Amounts of Water Provided by CERP Components” (during drought years) and SFWMD Proposed Five Year Water Resource Development Work Program, November 7, 2002, SFWMD, 2002d), the percent of this estimated water that has been made available, and the estimated amount that was under development as of September 30, 2002.

Table 10. Amount of Estimated Water Made Available and Under Development

Water Supply Planning Region	Water to Be Made Available (mgd)	Percent of Estimated Water Under Development as of September 30, 2002	Percent of Estimated Water Actually Made Available as of September 30, 2002
Lower East Coast	1,145	100%	3%
Lower West Coast	422	52%	22%
Upper East Coast	85	18.68%	23.74%
Kissimmee Basin	390	81%	0.40%
Total Quantity Made Available	2,043		

Core WS 1(d): Within each water supply planning region, the estimated additional quantities of water supply made available through District water supply development assistance

Table 11 presents the estimated additional quantities of water supply that was made available through District water supply development assistance from 2000 through 2002. It also presents the estimated amount to be made available in 2003. This data was obtained from Alternative Water Supply Applications filed in 2000, 2001 and 2002, and from Applications proposed for 2003. Note that the Kissimmee Basin was not eligible for the Water Supply Grant program.

DWMP 2002 Annual Report

Table 11. Amount of Additional Water Made Available in 2000, 2001 and 2002 and Estimated to be Made Available in 2003 through District Water Supply Development Assistance

Planning Area	Water Made Available (mgd)			Water Estimated to be Made Available (mgd)
	2000	2001	2002	2003
Lower East Coast	17.96	10.35	26.38	35.71
Lower West Coast	23.80	38.74	19.00	8.20
Upper East Coast	9.11	0.00	2.17	1.25
Kissimmee Basin	0.00	0.00	0.00	0.00
Total	50.87	49.09	47.55	45.16

Core Objective WS 2: Prevent contamination of water supplies

Core WS 2(a): Percentage of surface water supply sources for which water quality attains the designated use

There are 66 total surface water supply sources located within the SFWMD. According to the **2000 305(b) Report** published by the FDEP in 2001 (FDEP, 2001b), 57 percent of these sources have good water quality ratings, 33 percent have fair water quality ratings, and 2 percent have poor water quality ratings. Five of the sources, the Marco Lakes, are not in the FDEP database and, therefore, were not taken into consideration.

Table 12. Percentage of Good, Fair and Poor Water Quality Ratios for Surface Water Supply Sources

Water Quality Rating	Number of Sources	Percentage of Total
Good	38	57%
Fair	22	33%
Poor	1	2%
Not in FDEP database (Marco Lakes)	5	8%
Total	66	

SFWMD WS 2(b): Percentage of public water supply wellheads subject to wellhead protection ordinances

Table 13 indicates which counties had wellhead protection ordinances and the number of public water supply wells within each county during 2000, 2001 and 2002. Local government authorities in Monroe, Glades, Osceola and Okeechobee Counties verified that wellhead protection ordinances did not currently exist as of December 12, 2001. The number of public water supply wells in each county was obtained from District service centers and the District's permit database. The percentage of public water supply wellheads subject to wellhead protection ordinances is calculated from this information.

DWMP 2002 Annual Report

In 2000, the District had 2,752 public water supply wells within its boundaries. Of these 92 percent (2,528) are within counties that have wellhead protection ordinances, and 8 percent (224) are in counties that do not.

In 2001, the District had 2,885 public water supply wells within its boundaries. Of these 91 percent (2,641) are within counties that have wellhead protection ordinances, and 9 percent (244) are in counties that do not have wellhead protection ordinances.

In 2002, the District had 2,433 public water supply wells within its boundaries. Of these, 80 percent are within counties that have wellhead protection ordinances, and 20 percent are in counties that do not have wellhead protection ordinances

Table 13. Number of Public Water Supply Wellheads Subject to Wellhead Protection Ordinances

County	2000		2001		2002	
	Wellhead Protection Ordinances	Number of Public Water Supply Wells	Wellhead Protection Ordinances	Number of Public Water Supply Wells	Wellhead Protection Ordinances	Number of Public Water Supply Wells
Palm Beach	yes	605	yes	626	yes	588
Broward	yes	394	yes	424	yes	440
Miami-Dade	yes	255	yes	281	yes	177
Monroe	no	0	no	0	no	0
Glades	no	20	no	20	no	12
Hendry	yes	40	yes	41	no	34
Lee	yes	393	yes	362	yes	414
Collier	yes	165	yes	201	yes	176
Charlotte	yes	24	yes	24	no	18
St. Lucie	yes	234	yes	210	no	157
Martin	yes	246	yes	297	yes	162
Orange	yes	131	yes	129	no	116
Osceola	no	136	no	156	no	105
Polk	Yes	19	yes	23	no	10
Highlands	Yes	22	yes	23	no	7
Okeechobee	No	68	no	68	no	17
Total		2,752		2,885		2,433

DWMP 2002 Annual Report

Part C. Performance Measures for Flood Protection and Floodplain Management

Flood protection within the District is provided through both the facilities of the C&SF Project and by limiting land uses within identified flood prone areas. Floodplain management is achieved by protecting and restoring natural features of floodplains.

Core Objective FP 1: Minimize damage from flooding

Core FP 1(a): Percentage of District works maintained on schedule

According to the District's Water Resources Operations Industrial Engineering Unit quarterly reports, 85,599 District work order tasks were planned for FY 2002, and 66,343 tasks were completed. The percentage of District works that were maintained on schedule is 77.5 percent. This information was found in the District's Computerized Maintenance Management System.

SFWMD FP 1(b): Number and cost of stormwater retrofit projects carried out by the District

Table 14 presents the number and cost of stormwater retrofit projects carried out by the District in FY 2002. This information was obtained from the SFWMD service centers.

Table 14. Number and cost of SFWMD Stormwater Retrofit Projects in FY 2002

Service Center	Ad Valorem Funds		Pass Through Funds	
	Number of Projects	Cost	Number of Projects	Cost
Broward	0	\$0	0	\$0
Keys	0	\$0	1	\$200,000
Fort Myers	0	\$0	0	\$0
Martin/St. Lucie	0	\$0	0	\$0
Miami	0	\$0	17	\$13,724,000
Okeechobee	3	\$2,357,202	3	\$405,170
Orlando	7	\$2,275,000	0	\$0
Palm Beach	0	\$0	0	\$0
Total	10	\$4,632,202	21	\$14,329,170

SFWMD FP 1(c): Average number of days to complete environmental resource permit review and issue a permit once the application is complete

The average number of days to complete a review of an application and issue a permit in FY 2002 once the application was complete was 63.9 days for individual permits and 40.40 days for general permits. These numbers do not include projects that are on extended waiver by the applicants. This information was obtained from the District's Permit Application Tracking System (PATs).

DWMP 2002 Annual Report

SFWMD FP 1(d): Number of permit applications received

The number of environmental resource permit and surface water permit applications received in FY 2002 was 2,409. This information was obtained from the PATS.

SFWMD FP 1(e): Number of preapplication inspections

The number of environmental resource permit preapplication reviews conducted in FY 2002 was 220. This information was obtained from the PATS.

SFWMD FP 1(f): Number of permits issued

The number of environmental resource permits and surface water permits that were issued in FY 2002 was 2,242. This information was obtained from the PATS, and includes Individual Permits, General Permits and all others.

Core Objective FP 2: Promote nonstructural approaches to achieve flood protection, and to protect and restore the natural features and functions of the 100-year floodplain

Core FP 2(a): Number of acres identified for acquisition to minimize damage from flooding and the percentage of those acres acquired

Table 15 presents the Save Our Rivers projects that have been identified by the District to minimize flooding. The total project size is presented along with the number and percentage of total acres acquired by the end of FY 2002. This data was obtained from the *Save Our Rivers Land Acquisition and Management Plan* (SFWMD, 2000f) and the ATLAS database.

Table 15. Save Our River Projects Identified to Minimize Flooding

Project	Project Size (acres)	Total Acres Acquired	Percent Acquired
Corkscrew Regional Ecosystem Watershed (CREW)	58,528	24,965	43 %
East Coast Buffer	66,809	28,923	43 %
Kissimmee Chain of Lakes	33,919	27,844	82 %
Lake Marion Creek	17,300	10,500	60 %
Loxahatchee Slough	1,425	1,425	100 %
Nicodemus Slough	2,219	2,219	100 %
Reedy Creek	30,000	5,900	20 %
Shingle Creek	7,655	1,500	20 %
Water Conservation Area (WCAs)	855,680	789,394	92 % ^a
Total	1,073,535	892,670	83 %

a. 100% of the flowage easements has been acquired for the WCAs

Part D. Performance Measures for Water Quality

The District has many programs that monitor and improve surface and ground water quality within its boundaries. Several of these are coordinated with other agencies.

Core Objective WQ 1: Protect and improve surface water quality

Core WQ 1(a): Percentage of water segments that fully meet, partially meet, and do not meet their designated uses

Table 16 presents the percentage of water segments within the SFWMD boundaries that fully meet, partially meet, or do not meet their designated uses. These percentages were obtained from the **2000 305b Report** (FDEP, 2000b).

Table 16. Percentage of Water Segments in the SFWMD that Fully Meet, Partially Meet, and Do Not Meet Their Designated Uses

Status	Estuary	Lake	Stream
Meets	80%	3%	43%
Partially meets	15%	97%	52%
Does not meet	5%	0%	5%

Core WQ 1(b): Number of and percentage of SWIM and SFWMD priority water bodies for which pollutant load reduction goals (PLRGs) have been established (SWIM water bodies must have an approved SWIM plan)

Pursuant to Section 373.453, F.S. and Section 62-43.030, F.A.C., SFWMD staff reviewed the approved SWIM Priority List for South Florida to determine whether it needed to be updated. It became clear that the adopted list was no longer reflective of current funding and policy conditions as demonstrated by the following facts:

- SWIM Plans have been approved and adopted for Lake Okeechobee, Biscayne Bay, and the Indian River Lagoon.
- The Everglades Forever Act and the CERP will address the Everglades and associated regions.
- The Lake Okeechobee Protection Bill identifies the Kissimmee Upper Chain of Lakes as an area for surface water improvements.
- Sufficient resources are not available to develop new SWIM plans.
- Little funding is being provided for SWIM projects.
- The current legislative specific appropriation process does not require an approved SWIM plan to allocate funds for surface water restoration projects.

An update of the prioritization effort was needed to incorporate three additional important aspects of the status of a water body: the readiness of local governments to participate financially in implementing restoration projects; the emergence of significant restoration and preservation programs (i.e., CERP, Preservation 2000 and Florida Forever); and the presence of non-governmental organizations which have developed a broad public support for restoration of a particular waterbody.

District staff developed a ranking process that used the original SWIM criteria and three additional

DWMP 2002 Annual Report

criteria to address the factors above. The process resulted in a new "SFWMD Water Body List" that is presented in **Table 17**. The list will be used to guide District endorsement of locally-sponsored restoration projects seeking a legislative appropriation and District projects funded with ad valorem dollars. Within each tier, each water body is considered of equal priority.

Table 17. SFWMD Priority Water Body List as of September 2001

Tier 1 <ul style="list-style-type: none"> • Biscayne Bay • Florida Keys • Lake Istokpoga • Lake Okeechobee • Loxahatchee River • St. Lucie Estuary
Tier 2 <ul style="list-style-type: none"> • Caloosahatchee Estuary • Estero Bay • Florida Bay • Indian River Lagoon • Lake Worth Lagoon • Naples Bay / Gordon River • Rookery Bay / Marco
Tier 3 <ul style="list-style-type: none"> • Lake Arbuckle • Lake Butler • Lake Weohyakapka • Pine Island Sound / Matlacha / Ding Darling • Upper Kissimmee Chain of Lakes

Core WQ 1(c): Percentage of total stream miles and lake and estuary area in the District assessed for ambient water quality

Table 18 presents the total stream miles and the total lake and estuary area within the District boundaries, along with the miles or square miles and percentage assessed. This information was obtained from the *2000 305b Report* (FDEP, 2001b).

Table 18. Total Stream Miles and Lake and Estuary Area in the District Accessed for Ambient Water Quality

System Type	SFWMD Miles	SFWMD Square Miles	Assessed Miles	Assessed Square Miles	Percentage Assessed
Estuary	929.3		928.2		99.9%
Lake		677.3		676.3	99.9%
Stream		1,724.3		1,590.6	92.2%

DWMP 2002 Annual Report

SFWMD WQ 1(d): Number of SWIM plans being implemented according to SWIM plan schedules

Three SWIM Plans have been approved:

- Indian River Lagoon
- Lake Okeechobee
- Biscayne Bay.

According to the District's SWIM plan project managers, all three SWIM Plans are being implemented on schedule (SFWMD and SJRWMD, 1994; SFWMD, 1997; and SFWMD 1995).

SFWMD WQ 1(e): Number and percentage of permitted systems inspected through the Environmental Resource Permitting (ERP) Program, and percentage of those inspected found in compliance with permit conditions

The number and percentage of permitted systems inspected through the ERP Program, and the percentage of those inspected found in compliance with permit conditions is discussed in Part A of this chapter, under the performance measure Core CM(e).

Core Objective WQ 2: Protect and improve ground water quality

Core WQ 2(a): Improving, degrading, and stable trends in ground water quality

The FDEP did not include data on improving, degrading, and stable trends in ground water quality in the *2001 305(b) Report* (FDEP 2001b).

Core WQ 2(b): Improving, degrading, and stable trends in nitrate concentrations in springs

The SFWMD has no springs within its boundaries.

Part E: Performance Measures for Natural Systems Management

The District is preserving, enhancing, and restoring the water resource-related natural systems within its boundaries. Native ecosystems, along with their water resource-related functions, are being preserved. Altered ecosystems are being restored, where appropriate, along with their resource-related functions.

Core Objective NS 1: Maintain the integrity and functions of water resources and related natural systems

Core NS 1(a): Number and percentage of established minimum flows and levels (MFLs) being maintained, consistent with established recovery or prevention strategies

The District established MFLs for the Everglades, Lake Okeechobee, the Biscayne Aquifer, Lower West Coast aquifer systems, and the Caloosahatchee Estuary in September 2001. The St. Lucie Estuary MFL was established in September 2002; and the Loxahatchee River MFL is proposed for December 2002, for a total of seven MFLs. Data to determine how well these MFLs are being met have not yet been compiled or analyzed. In most cases, five to ten years worth of data will be needed to determine how well the MFLs are being maintained.

Core NS 1(b): Number of MFLs, by water body type, established annually and cumulatively

The SFWMD established five MFLs in September 2001. These included one wetland (the Everglades), one lake (Lake Okeechobee), one estuary (the Caloosahatchee Estuary) and two aquifers (the Biscayne Aquifer and the Lower West Coast Aquifer System). In September 2002, MFLs were established for the St. Lucie Estuary. The Loxahatchee River MFLs are proposed for completion in December 2002.

Core NS 1(c): Percentage of MFLs established in accordance with the previous year's schedule

The schedule for establishing MFLs is presented in **Table 19**. This list is published pursuant to Section 373.042(2), F.S. "Establishment" of a minimum flow or level, as provided in this list, is the publication of the notice of intended rule adoption in the Florida Administrative Weekly pursuant to Section 120.54(3)(a), F.S. The District will voluntarily conduct independent scientific peer reviews of MFL criteria for all water bodies on the above list, pursuant to Section 373.042(4), F.S. Several new water bodies from 2001 are included in the list: the Southern Coastal Biscayne Aquifer, Estero Bay, the Water Table Aquifer and the Lake Butler Chain of Lakes.

Table 19 also indicates whether the MFLs were completed on schedule and what year they were established. The MFL criteria for five water bodies were scheduled for establishment in 2000. These water bodies were Lake Okeechobee, the Everglades, the Caloosahatchee River and Estuary, the Biscayne Aquifer, and the Lower West Coast Aquifer System. None were established by the scheduled completion date. The establishment of MFLs was delayed until September 2001 to provide adequate consideration for other ongoing management planning activities in these systems and to address concerns expressed by the Governing Board, other agencies, and affected parties.

In accordance with the 2001 schedule, MFLs were to be established for the Loxahatchee River and

DWMP 2002 Annual Report

Estuary and the St. Lucie River and Estuary during 2001. Technical documentation to support these MFLs was developed and rule development was initiated during 2001. The final rule for the St. Lucie Estuary MFLs was completed in September 2002 and the rule for the Loxahatchee Estuary is pending for December 2002. MFLs for Florida Bay are scheduled for 2003.

Lake Istokpoga currently operates on a regulation schedule based on minimum levels. The District will revisit these existing minimum levels upon completion of the USACE's regulation schedule study due in 2004.

Table 19. Schedule for the Establishment of MFLs

Priority Water Bodies	Year Scheduled for Establishment	Year Established		
		2000	2001	2002
Lake Okeechobee	2000	no	yes	
Everglades	2000	no	yes	
St. Lucie River and Estuary	2001		no	yes
Biscayne Bay	2004			
Biscayne Aquifer	2000	no	yes	
Florida Bay	2003			
Loxahatchee River and Estuary	2001		no	yes
Southern Coastal Biscayne Aquifer	2004			
Caloosahatchee River and Estuary	2000	No	yes	
Estero Bay	2006			
Water Table Aquifer	2004			
Lower West Coast Aquifer	2000	No	yes	
Kissimmee River	2006			
Lake Kissimmee	2006			
Lake Tohopekaliga	2006			
East Lake Tohopekaliga	2006			
Alligator Lake	2006			
Lake Jackson	2006			
Lake Rosalie	2006			
Cypress Lake	2006			
Lake Hatchineha	2006			
Lake Pierce	2006			
Lake Marian	2006			
Fish Lake	2006			
Lake Istokpoga	2004			
Lake Butler Chain of Lakes	2008			
Floridan Aquifer	2004			

DWMP 2002 Annual Report

Core NS 1(d): Total acres of wetlands or other surface water authorized by Environmental Resource Permit to be impacted and acres required to be created, enhanced, restored, and preserved

The status of wetlands authorized to be impacted by an environmental resource permit is as follows for FY 2002:

- Existing ERP wetlands: 11,765 acres:
- Impacted: 3,112 acres
- Preserved/Enhanced: 6,171 acres
- Created/Restored: 2,038 acres
- Upland Compensation: 1,035 acres
- Total Preserved/Created/Uplands: 9,244 acres

The data source for the above is the PATS, and the number for Preserved/Enhanced does not reflect acres of “undisturbed” wetlands.

SFWMD NS 1(e): Acres of wetlands preserved as a percent of wetland acres reviewed through ERP applications; acres of wetlands reviewed; acres of wetlands impacted; acres of wetlands preserved; and acres of wetlands mitigated (may include wetlands preserved on-site)

Using the numbers presented under SFWMD NS 1(d), the following percentages for FY 2002 were calculated:

- Preserved/created as a percent of wetland acres reviewed: 70%
- Impacted as a percent of wetland acres reviewed: 26%
- Total acres of mitigation as a percent of wetlands impacted: 297%

Core Objective NS 2: Restore degraded water resources and related natural systems to a naturally functioning condition

Core NS 2(a): Acres of invasive nonnative aquatic plants in inventoried public

The FDEP’s regional aquatic biologists last inventoried acres of invasive non-native aquatic plants in public waters in FY 2001. It was found that these plants covered a total of 25,082 acres within the District’s boundaries. The survey data is collected every other year, so the following, as previously reported, is the most recent data regarding acreage covered by each species:

- Hydrilla: 24,442 acres
- Water Hyacinths: 303 acres
- Water Lettuce: 132 acres
- Hygrophila: 205 acres

Core NS 2(b): Acres of District managed lands infested with invasive nonnative upland plants by degree of land coverage

The data for this performance measure is generated from a bi-annual aerial survey. The next survey

DWMP 2002 Annual Report

will be initiated during the winter of 2003, and will likely be available for the FY 2003 DWMP.

Table 20 presents the status of exotic plant control on SOR lands managed by the District as of April 2002. There were 21,300 acres of lands managed by the District that were infested with invasive nonnative upland plants. The District manages 80,184 acres which require low maintenance to control exotics; 23,500 acres which require medium maintenance for control; and 19,300 acres which require high maintenance to control exotic plant species.

Table 20. Status of Exotic Plant Control as of April 2002

Area	Total Acres	Infested Acres	Low Maintenance	Medium Maintenance	High Maintenance
West Coast Region					
CREW	25,000	500	20,000	3,500	1,000
East Coast Region ^a					
DuPuis	21,875	0	12,975	8,500	400
Everglades					
Model Lands	13,000	800	6,150	4,150	1,900
Kissimmee/Okeechobee Region					
Kissimmee River	43,000	20,000	3,000	5,000	15,000
Upper Lakes Region					
Lake Marion Creek	10,223	0	10,223	0	0
Lower Reedy Creek	5,500	0	4,500	1,000	0
Upper Reedy Creek	5,000	0	4,950	50	0
Shingle Creek	1,600	0	1,300	300	0
Upper Chain	19,086	0	17,086	1,000	1,000
TOTAL	144,284	21,300	80,184	23,500	19,300

a. West Jupiter Wetlands and South Fork are now managed by other agencies.

Core NS 2(c): Acres of District-owned lands identified in land management plans as needing restoration, acres undergoing restoration, and acres with restoration activities completed

The status of Save Our Rivers restoration projects as of the end of 2002 is presented in Table 21.

Table 21. Save Our Rivers Restoration Projects as of the End of 2002

Needing Restoration		Undergoing Restoration		Restoration Complete	
Area	Acres	Area	Acres	Area	Acres
East Coast Buffer	77,259	Indian River Lagoon	397	DuPuis Reserve	21,875
New Palm Dairy	1,900	Loxahatchee Slough	1,425	Rattlesnake Hammock	500
Shingle Creek	950	Kissimmee River	17,000	Johnson Island	1,735
		SGWEA	120	Kissimmee River	10,000
		East Coast Buffer	5,000		
		Loxahatchee River	515		
		Corkscrew Regional Ecosystem Watershed (CREW)	4,670		
Totals	80,109		29,127		34,110

DWMP 2002 Annual Report

SFWMD NS 2(d): Acres of land infested with invasive nonnative upland plants, by species inventoried

The most recent survey of land infested with invasive nonnative upland plants was conducted in 1999. The results were as follows:

- Melaleuca: 359,000 acres
- Brazilian Pepper: 1,024,000 acres
- Australian Pine: 385,000 acres
- Old World Climbing Fern: 107,000 acres
- Lather Leaf: 6,500 acres
- Burma Reed: 15,000 acres

SFWMD NS 2(e): Acres of cattail coverage relative to District 1995 aerial photo maps

The last available survey of acreage of cattail coverage was performed in 1995 (Rutchev and Vilchek, 1995). The results for 1991 and 1995 are presented in **Table 22**.

Table 22. Cattail coverage in Water Conservation Area 2A

Year	Cattail (acres)	Cattail Dominant Mix (acres)	Cattail Sparse Mix (acres)
1991	1,041	5,650	6,819
1995	4,066	9,742	9,193

SFWMD NS 2(f): Percent increase in wading bird populations as measured by systematic reconnaissance flights

Table 23 presents the number of nesting birds documented in the Everglades during systematic reconnaissance flights for five characteristic species. These species are the Great Egret, the Snowy Egret, the Tricolored Heron, the White Ibis, and the Wood Stork. A 39% increase in the three-year running average of nesting pairs was documented in 2001 over the three-year running average for 2000 (Ogden, 2001).

Table 23. The Number of Nesting Birds in the Everglades Basin for Five Characteristic Species

Species	1997 – 1999	1998 – 2000	1999 - 2001	Target
Great Egret	5,084	5,544	5,996	4,000
Snowy Egret and Tricolored Heron	1,862	2,788	4,270	10,000 - 20,000
White Ibis	5,100	11,270	16,555	10,000 - 25,000
Wood Stork	279	863	1,538	1,500 - 2,500